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LIFTING AND TRANSPORT STRAP

SPECIFICATION

Background of the Invention

Field of the Invention

The present invention relates generally to apparatus for the lifting and transport of bulky articles. More particularly the invention concerns a lifting and transport apparatus that is specially designed for the lifting and transport of hot water heaters.

Discussion of the Prior Art

During the transport and installation of hot water heaters, the bulky and often quite heavy hot water heater must be moved into position within very tight quarters, such as water heater cabinets and specially designed water heater enclosures. Because of the tight quarters, it is difficult for more than one man to move the hot water heater into position. Accordingly, this cumbersome task often falls on a single installer. A primary object of the present invention is to provide a simple; easy to use lifting and transport strap assembly that enables one person too quickly and easily position the hot water heater into position.

In the past, the transport of hot water heaters has generally been accomplished through the use of two-wheel dollies. However, such dollies are quite cumbersome to use and provide little assistance to the installer in finally positioning the hot water heater within the hot water heater closet or like enclosure. More particularly, while the dolly can be used to transport the hot water heater to the vicinity of the water heater closet, actually positioning the hot water heater within the closet requires that the hot water heater be removed from the dolly and manually positioned within the hot water heater closet primarily by a single installer. Since the typical 40 gallon hot water heater weighs well in excess of 130 pounds, positioning the hot water heater comprises a formidable task. Additionally, since the typical hot water heater is over 18 inches in diameter and over 55 inches in height, gripping the hot water heater in a manner to position it within the hot water heater enclosure is most difficult. It is these problems that the apparatus of the present invention seeks to overcome by providing a uniquely designed lifting and transport strap that can be conveniently positioned around and about the hot water heater to enable it to be lifted and positioned by a single installer.

Summary of the Invention

By way of summary, one form of the lifting and transport strap assembly of the present invention for lifting and transporting bulky articles comprises a main

strap assembly for circumscribing at least a portion of the bulky article, first and second spaced apart side straps connected to the main strap assembly for engaging the sides of the bulky article and a bottom strap spanning the side straps for engaging the bottom of the bulky article. Gripping rings are affixed to the ends of the main strap assembly to assist in gripping the apparatus and means are provided for adjusting the length of the main strap of the main strap assembly and for adjusting the length of the side straps so that the apparatus can be used to lift and transport articles of various sizes.

With the foregoing in mind it is an object of the present invention to provide a lifting and transport strap assembly that can be used by one man to expeditiously lift and transport bulky articles such as hot water heaters.

Another object of the invention is to provide a lifting and transport strap assembly of the aforementioned character that is adjustable so that it can be used to lift and transport articles of various sizes.

Another object of the invention is to provide a lifting and transport strap assembly as described in the preceding paragraphs that is easily connected to the article to be lifted and tends to stabilize the article during the lifting and transport step.

Another object of the invention is to provide a lifting and transport strap assembly for lifting articles, such as hot water heaters, which is designed in a

manner such that the article to be transported will not be dented or otherwise damaged during the lifting and transport operation.

Another object of the invention is to provide a lifting and transport strap assembly of the character described that is of a durable and rugged construction.

Another object of the invention is to provide a lifting and transport strap assembly of the class described that is of a simple construction that can be inexpensively manufactured.

Brief Description of the Drawings

Figure 1 is a generally perspective view of one form of the lifting and transport strap assembly of the present invention showing the apparatus positioned about a conventional hot water heater.

Figure 2 is a generally perspective front view of the form of the lifting and transport strap assembly shown in figure 1.

Figure 3 is a generally perspective rear view of the form of the lifting and transport strap assembly shown in figure 1.

Figure 4 is a top plan view of the lifting and transport strap assembly shown in figure 1.

Figure 5 is a greatly enlarged top plan view of the right hand portion of the strap assembly shown in figure 4.

Figure 6 is an enlarged, generally perspective view of the main strap

assembly of the apparatus.

Figure 7 is a generally perspective, exploded view of the main strap assembly of the apparatus.

Description of the Invention

Referring to the drawings and particularly to figures 1 through 5, one form of the lifting and transport strap assembly for lifting bulky articles such as hot water heaters is there illustrated and generally designated by the numeral 14. As best seen in figures 1, 2 and 3, assembly 14 includes a main strap assembly 16 which is adapted to circumscribe at least a portion of the bulky article such as the hot water heater "WH" shown in figure 1.

As depicted in figures 5 and 7, main strap assembly 16 comprises a generally semicircular shaped, yieldably deformable main strap 18 having spaced apart extremities 18a and 18b, a generally semicircular shaped, semirigid plastic strap like component 20 that is circumscribed by strap 18 and a generally semicircular shaped cushioning means, shown here as a yieldably deformable foam rubber inner component 22 which is connected to plastic component 20. In use, component 22, along with component 20, functions to protect the article being lifted from damage. Component 22 also functions to frictionally grip the sides of the article such as the hot water heater "WH" shown in figure 1. Component 20 can be of various sizes depending upon the article to be transported, but when

transporting conventional hot water heaters, component 22 is preferably about six inches in width.

Also comprising a part of the main strap assembly 16 of the apparatus is adjustment means for adjusting the length of main strap 18 and gripping means affixed to the spaced apart extremities of main strap 18 for gripping the main strap assembly. In the present form of the invention the adjustment means of the main strap assembly comprises a conventional buckle loop 24 that is interconnected to strap 18 in the conventional manner shown in figures 4 and 5 of the drawings (see also figure 7). With this arrangement it is apparent that the overall length of the strap 18 can readily be adjusted to accommodate hot water heaters or other bulky articles of various sizes.

The gripping means of the present embodiment of the invention comprise generally "D" shaped rings 26 that are affixed to the ends of strap 18 and handgrips 28 that are interconnected with rings 26 manner best seen in figures 1,2 and 3 of the drawings. Handgrips 28 include a flexible connector strap 28a and a generally cylindrically shaped handgrip 28b that can be conveniently and securely gripped by the installer during the lifting and transport operation. Connector straps 28a are interconnected with connector rings 26 manner such that the handle attachments can be angularly positioned so to best accommodate the different angles of force that may be used in lifting the article to be transported.

Also forming a part of the lifting and transport strap assembly of the present invention are first and second spaced apart side straps 30 and 32 that connected to main strap 18 for engaging the sides of the hot water heater or other bulky article to be transported. The first and second side straps is connected proximate its upper end with main strap 18 and is connected proximate its lower end to a bottom strap 34 that spans the first and second side straps in a manner shown in figure 1. Side strap adjustment means in the form of conventional buckle loops 36 are provided on each of the side straps so that the length thereof can be adjusted to accommodate articles of various sizes. To better grip the water heater or other article being moved and to protect the article against damage, each of the side and bottom straps is provided with cushioning, or friction means here shown as a thin layer of rubber or like cushioning material 36.

In using the lifting and transport strap assembly of the invention, the main strap 18 and the side straps 30 and 32 are first appropriately adjusted using the adjustment loops 24 on 36 to fit the article to be transported so that the assembly can be placed in engagement with the article to be moved in a manner shown in figure 1 of the drawings. If desired, a material sold under the name and style VELCRO can be used to secure the straps in position after they have been adjusted. With the assembly in the general position shown in figure 1, the workmen can grasp the handles 26b and exert and inward and upward force that

enables the article to be comfortably lifted and transported to a desired location with optimum leverage.

Having now described the invention in detail in accordance with the requirements of the patent statutes, those skilled in this art will have no difficulty in making changes and modifications in the individual parts or their relative assembly in order to meet specific requirements or conditions. Such changes and modifications may be made without departing from the scope and spirit of the invention, as set forth in the following claims.